December 13, 1996

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air and Hazardous Waste

FROM: Martin Bauer, Chief
Air Quality Permitting Bureau

SUBJECT: Issuance of Tier II Operating Permit #777-00009 to Idaho Sand & Gravel (Portable Asphalt Plant)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing TIER II Operating Permits.

PROJECT DESCRIPTION

This project is for the issuance of a Tier II Operating Permit (OP) to Idaho Sand & Gravel for a portable hot-mix asphalt plant. The Tier II OP will establish the portable facility as a synthetic minor source.

SUMMARY OF EVENTS

On May 31, 1996, DEQ received a Tier II OP application, dated May 29, 1996. On July 1, 1996, the application was declared complete. On July 22, 1996, DEQ received source testing information to supplement the application.

On September 11, 1996, a proposed Tier II OP was issued for public comment. The public comment period was from September 27, 1996, through October 28, 1996. On October 7, 1996, DEQ received comments about the content of the proposed OP. These comments were addressed by DEQ in the response package.

RECOMMENDATIONS

Based on the review of the Tier II OP application materials and of applicable state and federal rules and regulations concerning the permitting of air pollution sources, the Bureau staff recommends that Idaho Sand & Gravel be issued a Tier II OP. Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees for the Tier II OP.

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cc: OP File Manual
Source File
COF

December 13, 1996

MEMORANDUM

TO: Martin Bauer, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Mike Simon, Air Quality Engineer
Air Quality Permitting Bureau
New Source Review

THROUGH: Susan J. Richards, Air Quality Permits Manager
Air Quality Permitting Bureau
Operating Permits

SUBJECT: Technical Analysis for Tier II Operating Permit #777-00009
Idaho Sand & Gravel; Portable Barber Green Asphalt Plant

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 of the (Rules for the Control of Air Pollution in Idaho) for issuing Tier II Operating Permits.

PROJECT DESCRIPTION

A proposed Tier II Operating Permit (OP #777-00009) was issued on September 11, 1996. During the scheduled public comment period DEQ received several comments from the applicant. This technical analysis covers all requested changes to the proposed OP by the applicant and are summarized below:

- The applicant requested to decrease the allowable PM-10 emission rate to provide more operational flexibility. The allowable PM-10 emission rate limit in the OP has been decreased from 17.32 lb/hr to 7.50 lb/hr based on a grain leading standard of 0.04 gr/dscf.

- The applicant requested that residual fuel (ASTM Grade #5) be added to the application for the burner fuel. An analysis was conducted which assumes that the worst case sulfur content of the fuel is 1.75% by weight. As a result of this new analysis, the maximum allowable asphalt production was decreased from 2,491,330 T/yr to 923,917 T/yr. Annual SO_2 limitation remains at 99.0 T/yr.

SUMMARY OF EVENTS

On May 31, 1996, DEQ received a Tier II OP application, dated May 29, 1996. On July 1, 1996, the application was declared complete. On July 22, 1996, DEQ received source testing information to supplement the application.

On September 11, 1996, a proposed Tier II OP was issued for public comment. The public comment period was from September 27, 1996, through October 28, 1996. On October 7, 1996, DEQ received comments about from the applicant. These comments are addressed by DEQ in the response package.

DISCUSSION

1. Process Description

Sand and gravel are conveyed from a feed system, which weighs the material, to the drum dryer. In the dryer, the material is exposed to an open-flame generated by a diesel-fired horizontal burner. The material is dried in the front portion of the drum, and liquid asphalt is added in the back of the drum. The finished asphalt is then moved by a slat conveyor to overhead storage silos to be loaded on trucks. This asphalt plant was originally constructed in 1979.

2. Equipment listing

2.1 The hot-mix asphalt plant has the following specifications:

Manufacturer:	Barber Green
Maximum Rated Capacity:	400 T/hr
Model #:	DM-60

2.2 The horizontally fired burner in the drum dryer has the following specifications:

Manufacturer:	Hauck
Maximum Rated Capacity:	82.4 MM Btu/hr
Model #:	JB375-82
Fuel Type:	Residual Fuel Oil (ASTM #4,#5,#6)

3. Control Description

Particulate emissions from the drum dryer are vented to and controlled by a wet scrubber. The wet scrubber has the following specifications:

Manufacturer:	Yankee Machine

4. Stack Specifications

4.1 The asphalt plant has the following stack specifications:

Stack Height:	17.0 ft
Stack Diameter:	3.0 ft
Average Flow Rate:	45,000 acfm
Average Exit Temperature:	300° F

5. Area Classification

Idaho Sand & Gravel requests to operate the portable asphalt plant within all attainment, unclassifiable, and non-attainment areas in the state of Idaho.

6. Facility Classification

The asphalt plant facility is not a designated facility as defined in IDAPA 16.01.01.006.25. The asphalt plant facility is not a major facility as defined in IDAPA 16.01.01.008.14, because the Tier II OP will limit the potential to emit (PTE) of this facility below 100 tons per year (TPY) for all regulated air pollutants.

7. Emission Factors

The hot mix asphalt (HMA) emission estimates were calculated using emission factors (EF) obtained from the U.S. EPA AP-42. Table 7-1 below summarizes each EF used for estimating HMA emissions at the stack. Note: Sulfur dioxide emissions are based on the sulfur content in the fuel oil multiplied by the EF. The applicant has requested to burn ASTM Grade #5 fuel oil which assumes maximum sulfur content (S) of 1.75 weight percent. PM-10 emissions are based on the assumption that the maximum grain loading after scrubber control will meet the 0.04 gr/dscf requirements as established in the New Source Performance Standards for Hot Mix Asphalt Plants (40 CFR 60.90). PM-10 emissions were calculated based on the average flow rate in dscf calculated based on 45,000 acfm submitted in the application.

Table 7-1. HMA Emission Factors

Pollutant	gr/dscf	Residual Fuel (lb/10^3 gal)	AP-42 Reference
PM-10	0.04	--	--
CO	--	5	Table 1.3-2
NO_x	--	55	Table 1.3-2
SO_x	--	157S	Table 1.3-2

8. Emission Estimates

A spreadsheet was developed to calculate allowable emissions and production rates which will limit the facility's PTE for all regulated air pollutants to below 100 tons per year (TPY). The spreadsheet also calculates ambient impacts based on Screen3 modeling results to ensure that all applicable National Ambient Air Quality Standards (NAAQS) will be met in attainment areas and that there will be no significant contribution to a NAAQS violation in non-attainment areas. Spreadsheet calculations are presented in Appendix A of this memo.

The maximum allowable asphalt throughput, based on a 400 T/hr capacity, was calculated to be 923,917 T/yr. This throughput limit corresponds to a sulfur dioxide (SO_2) annual emission rate limit of 99 TPY when firing residual (ASTM Grade #5) fuel oil in the burner. The annual throughput limit will ensure that the facility will remain a minor facility in accordance with IDAPA 16.01.01.008.14. All other air pollutants, i.e. NO_x, CO & PM-10, are inherently limited below 99 TPY by permit conditions.

For PM-10 non-attainment or proposed non-attainment area operations, the maximum allowable asphalt throughput, based on 400 T/hr capacity, was calculated to be 4,643 T/day. This daily throughput protects the PM-10 24-hr significant contribution requirements to areas that are in violation of the PM-10 NAAQS (non-attainment areas). The facility PM-10 impact is well below the annual PM-10 significant contribution level when annual throughput limits are set at 923,917 T/yr.

9. Modeling

Modeling emissions from the asphalt plant stack was conducted using EPA approved SCREEN3 computer modeling program. The maximum one hour impact was calculated to be 3.45 $\mu g/m^3$ using a one lb/hr emission rate input.

The only limitation required on this facility, based on the ambient analysis, is in the protection of the 24-hr PM-10 significant contribution requirement of 5.0 $\mu g/m^3$. A limitation of 4,643 T/day throughput is required to meet this ambient standard in PM-10 non-attainment areas. All other ambient standards will be met at the proposed allowable throughput limits.

All Screen3 Modeling Output files are presented in Appendix B of this memo.

10. Regulatory Review

10.1 NSPS Applicability

The Idaho Sand & Gravel asphalt facility is an affected facility as defined in 40 CFR 60.90, Subpart I - Standards of Performance for Hot-Mix Asphalt Facilities, because the source commenced construction after the applicability date of June 11, 1973. According to the Tier II application, actual construction occurred in 1978.

NOTE: This facility is defined as a Tier I Source in accordance with IDAPA 16.01.01.006.100.b. because the facility is subject to the requirements established in 40 CFR 60.90. Therefore, this Tier I Source will be required to obtain a Tier I operating permit by June 1, 1999, in accordance with IDAPA 16.01.01.301.02.b.i..

10.2 Regulatory Requirements

In summary, the facility is subject to the following state and federal regulatory requirements:

IDAPA 16.01.01.401	Tier II Operating Permit;
IDAPA 16.01.01.403	Permit Requirements for Tier II Sources;
IDAPA 16.01.01.404	Procedures for Issuing Permits;
IDAPA 16.01.01.405	Conditions for Tier II Permits;
IDAPA 16.01.01.406	Obligation to Comply;
IDAPA 16.01.01.470	Permit Application Fees for Tier II Permits;
IDAPA 16.01.01.577	Ambient Air Quality Standards for Specific Air Pollutants;
IDAPA 16.01.01.590	New Source Performance Standards;
IDAPA 16.01.01.625	Visible Emissions;
IDAPA 16.01.01.650	Reasonably Control Fugitive Emissions;
IDAPA 16.01.01.727	Residual Fuel Oils;
IDAPA 16.01.01.728	Distillate Fuel Oil;
IDAPA 16.01.01.805	Rules for Control of Hot-Mix Asphalt Plants; and
40 CFR 60.90	Standards of Performance for Hot-Mix Asphalt Facilities.

11. AIRS

The AIRS database requires minor updating. A copy of the changes made to the AIRS computer output file for this facility is presented in Appendix C of this memo.

FEES

Tier II application fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to a five hundred dollar ($500) application fee.

Upon issuance of this Tier II OP, this facility will no longer be subject to registration and registration fees in accordance with IDAPA 16.01.01.525. Currently, based on a review of the Air Emissions Database Master List, dated August 2, 1996, Idaho Sand & Gravel has paid for approximately 13.5 tons of pollutants required to be registered in accordance with IDAPA 16.01.01.525.

RECOMMENDATIONS

Based on the review of the Tier II OP application materials and of applicable state and federal rules and regulations concerning the permitting of air pollution sources, the Bureau staff recommends that the portable Idaho Sand & Gravel facility be issued a Tier II OP. Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees for the Tier II OP.

MB\SJR\MS:jrj...\permit\Idahosand\idsandf.TM4

cc: Boise Regional Office
R. Wilkosz/TSB
P. Rayne/AFS
Source File
COF

APPENDIX A

Idaho Sand & Gravel
Emission Estimates and Impact Analysis Spreadsheet

Company:	Idaho Sand & Gravel	Engineer:	Mike Simon
Project:	400 T/hr Barber Green Hot Mix Asphalt Plant Portable	Date:	Nov 12, 1996
		Filename:	IS&G.wk1

INPUT

Facility Type:	B	(A = Batch Mix Hot Mix Asphalt Plant) (B = Drum Mix Hot Mix Asphalt Plant)
Dryer Fuel Type:	C	(A = Natural Gas-Fired Dryer) (B = Distillate Fuel Oil-Fired Dryer) (C = Residual Fuel Oil-Fired Dryer) (D = Waste Oil-Fired Dryer)
Default Heat Input and Fuel Usage?(Y/N)	n	

	Submitted Value		Default Value
Rated Heat Input Capacity:	82.4	[=] MMBtu/hr [=]	N/A
Fuel Usage:	416.0	[=] gal/hr [=]	N/A
Fuel Sulfur Content:	1.75	[=] wt %	
Facility Production Capacity:	400	[=] ton/hr	Note: Maximum 700 Tons/year allowed.
Maximum Annual Hours of Operation:		[=] hr/yr	Flowrate: 21851 [=] dscfm
Modeled 1-hr Concentration:	3.45	[=] µg/m³ at emission rate of [lb/hr	

Facility Limitations

Annual Threshold Emission Limit:	A	(A = <100 Tons/yr; Below Title V Threshold) (B = <250 Tons/yr; PSD Threshold)
Selected Emission Limitation:	100 Tons/yr	

Generator? (Y/N)	n	
		0 Units Conversion Factor

Enter Dryer Stack Control Efficiency data ---

Pollutant	DRYER STACK: Emission Factor [=] g/dscf	DRYER STACK: Emission Rate (Controlled) [=] lb/hr	DRYER STACK: Control Efficiency[1] [=] %	DRYER STACK: Emission Rate (Controlled) [=] lb/hr	GENERATOR SET: Emission Factor [=] lb/hp-hr	GENERATOR SET: Emission Rate (Uncontrolled) [=] lb/hr	GENERATOR SET: Control Efficiency [=] %	GENERATOR SET: Emission Rate (Controlled) [=] lb/hr
Total PM_{10}	0.0400 [=] lb/10³ scf	7.5		7.5		0.00	0.00%	0.00
CO	5	2.1	0.00%	2.1		0.00	0.00%	0.00
NO_x	55	22.9	0.00%	22.9		0.00	0.00%	0.00
SO_2	274.75	114.3	25.00%	85.7		0.00	0.00%	0.00

[1] Dryer Stack control efficiencies are for a baghouse or scrubber system, and, are pollutant specific.

Background Concentrations

	1-hr	3-hr	8-hr	24-hr	Quarterly	Annual
PM_{10}				86		35.7
CO	11400		5130			
NO_x						40
SO_2		343		144		24.5

Mean Wind Speed (U)	10 [=] mph
Material Moisture Content (M)	2.5 [=] %
Particle Size Multiplier (k)	
PM-10 (<10 µm)	0.35 [=] dimensionless
Emission Factor[1]	
PM-10 (<10 µm)	0.0020 [=] lb/T
PM'	0.0053 [=] lb/T

Notes: [1] EF = k*0.0032*(U/5)^1.3/(M/2)^1.4
Drop-Point Equation, Rating "A." AP-42, 5th Ed. p.13.2.4-3. Wind Speed = 10 mph; Moisture = 2.5%; Assumes Aggregate = 94% of product.

OUTPUT

ATTAINMENT/NON-CLASSIFIABLE AREAS			NON-ATTAINMENT AREAS	
Uncontrolled Emissions	**Controlled Emissions**	**Dryer**	**Uncontrolled Emissions**	**Controlled Emissions**
	8.65 tons/yr	PM		8.65 tons/yr
	8.65 tons/yr	PM-10		8.65 tons/yr
2.40 tons/yr	2.40 tons/yr	CO	2.40 tons/yr	2.40 tons/yr
26.42 tons/yr	26.42 tons/yr	NOx	26.42 tons/yr	26.42 tons/yr
132.00 tons/yr	99.00 tons/yr	SO2	132.00 tons/yr	99.00 tons/yr
		Generator		
0.00 tons/yr	0.00 tons/yr	PM	0.00 tons/yr	0.00 tons/yr
0.00 tons/yr	0.00 tons/yr	PM-10	0.00 tons/yr	0.00 tons/yr
0.00 tons/yr	0.00 tons/yr	CO	0.00 tons/yr	0.00 tons/yr
0.00 tons/yr	0.00 tons/yr	NOx	0.00 tons/yr	0.00 tons/yr
0.00 tons/yr	0.00 tons/yr	SO2	0.00 tons/yr	0.00 tons/yr
		Fugitives		
7 tons/yr	6.95 tons/yr	PM	6.95 tons/yr	6.95 tons/yr
3 tons/yr	2.63 tons/yr	PM-10	2.63 tons/yr	2.63 tons/yr
		Totals:		
7 tons/yr	15.60 tons/yr	PM	6.95 tons/yr	15.60 tons/yr
3 tons/yr	11.28 tons/yr	PM-10	2.63 tons/yr	11.28 tons/yr
2.40 tons/yr	2.40 tons/yr	CO	2.40 tons/yr	2.40 tons/yr
26.42 tons/yr	26.42 tons/yr	NOx	26.42 tons/yr	26.42 tons/yr
132.00 tons/yr	99.00 tons/yr	SO2	132.00 tons/yr	99.00 tons/yr
132 [=] T/yr of SO_2	99.0 [=] T/yr of SO_2	Title V PTE Summary	132 [=] T/yr of SO_2	99.0 [=] T/yr of SO_2
132 [=] T/yr of SO_2	99.0 [=] T/yr of SO_2	Facility PTE Summary	132 [=] T/yr of SO_2	99.0 [=] T/yr of SO_2

Enforceable Limits -- Attainment Areas			Enforceable Limits -- Non-Attainment Areas	
24.0 hrs/day	2,310 hr/yr	Operation	11.6 hrs/day	2,310 hr/yr
9,600 tons/day	923,917 tons/year	Limits	4,643 tons/day	923,917 tons/year

		Emission		
Dryer Controlled Emission Rates		Limits	**Dryer Controlled Emission Rates**	
7.49 lbs/hour	8.7 tons/year	PM-10	7.49 lbs/hour	8.7 tons/year
2.08 lbs/hour	2.4 tons/year	CO	2.08 lbs/hour	2.4 tons/year
22.88 lbs/hour	26.4 tons/year	NOx	22.88 lbs/hour	26.4 tons/year
85.72 lbs/hour	99.0 tons/year	SO2	85.72 lbs/hour	99.0 tons/year
		Emission		
Generator Controlled Emission Rates		Limits	**Generator Controlled Emission Rates**	
0.00 lbs/hour	0.00 tons/year	PM-10	0.00 lbs/hour	0.0 tons/year
0.00 lbs/hour	0.00 tons/year	CO	0.00 lbs/hour	0.0 tons/year
0.00 lbs/hour	0.00 tons/year	NOx	0.00 lbs/hour	0.0 tons/year
0.00 lbs/hour	0.00 tons/year	SO2	0.00 lbs/hour	0.0 tons/year

DEQ Classification:	**A2**	**DEQ Classification:**	**A2**

ATTAINMENT/NON-CLASSIFIABLE AREAS -- MODELING ANALYSIS

Pollutant	Allowable Impacts NAAQS: Hours of Operation [=] hr/day	Allowable Impacts NAAQS: Hours of Operation [=] hr/year	Allowable Impacts NAAQS: Other	< 100 TPY[4]: Hours of Operation [=] hr/year	Permitted Impacts: Hours of Operation [=] hr/day	Permitted Impacts: Hours of Operation [=] hr/year	Permitted Impacts NAAQS: Calculated 24-hr Impact [=] µg/m³	Permitted Impacts NAAQS: Calculated Annual Impact [=] µg/m³	Permitted Impacts NAAQS: Other	< 100 TPY[4]: Calculated Emissions [=] ton/year
PM	N/S	N/S								
PM_{10}	24.0	8,760		8,760			10.3	0.5		11.28
CO	N/S	N/S		8,760			2.9	0.2		2.40
			1.0 [1]				---	---	7.2 [1]	
			8.0 [2]				---	---	5.0 [2]	
NO_x	N/S	8,760		8,654			---	1.7		26.42
SO_2	24.0	8,760		2,310			118.3	6.2		99.00
			3.0 [3]				---	---	266.2 [3]	

FUGITIVE SOURCES	PM	PM_{10}
Pre-Dryer Source Emissions ([=] lb/hr)		
Loader -> Cold Aggregate Bin	2.0051	0.7587
Cold Aggregate Bin -> Conveyor	2.0051	0.7587
Conveyor -> Drum Dryer	2.0051	0.7587
Total Pre-Dryer Source Emissions	6.0154	2.2761
Post-Dryer Source Emissions[5]		
Screening Process	---	---
Screen -> Hot Bins	---	---
Hot Bins -> Weigh Hopper	---	---
Weigh Hopper -> Pug Mill	---	---
Total Post-Dryer Source Emissions	---	---
Scavenger Control Efficiency	N/A	N/A
Total Uncontrolled Emissions ([=] lb/hr)	6.0	2.3
Total Uncontrolled Emissions ([=] ton/yr)	6.9	2.6
Total Controlled Emissions ([=] lb/hr)	6.0	2.3
Total Controlled Emissions ([=] ton/yr)	6.95	2.63

NON-ATTAINMENT AREAS -- MODELING ANALYSIS

Pollutant	Allowable Impacts NAAQS: Hours of Operation [=] hr/day	Allowable Impacts NAAQS: Hours of Operation [=] hr/year	Allowable Impacts NAAQS: Other	< 100 TPY[4]: Hours of Operation [=] hr/year	Permitted Impacts: Hours of Operation [=] hr/day	Permitted Impacts: Hours of Operation [=] hr/year	Permitted Impacts NAAQS: Calculated 24-hr Impact [=] µg/m³	Permitted Impacts NAAQS: Calculated Annual Impact [=] µg/m³	Permitted Impacts NAAQS: Other	< 100 TPY[4]: Calculated Emissions [=] ton/year
PM	N/S	N/S								
PM_{10}	11.6	4,237		8,760	11.6	2,310	3.0	0.5		11.28
CO	N/S	N/S		8,760			1.4	0.2		2.40
			1.0 [1]				---	---	7.2 [1]	
			8.0 [2]				---	---	5.0 [2]	
NO_x	N/S	8,760		8,654			---	1.7		26.42
SO_2	24.0	8,760		2,310			57.2	6.2		99.00
			3.0 [3]				---	---	266.2 [3]	

FUGITIVE SOURCES	PM	PM_{10}
Pre-Dryer Source Emissions ([=] lb/hr)		
Loader -> Cold Aggregate Bin	2.0051	0.7587
Cold Aggregate Bin -> Conveyor	2.0051	0.7587
Conveyor -> Drum Dryer	2.0051	0.7587
Total Pre-Dryer Source Emissions	6.0154	2.2761
Post-Dryer Source Emissions[5]		
Screening Process	---	---
Screen -> Hot Bins	---	---
Hot Bins -> Weigh Hopper	---	---
Weigh Hopper -> Pug Mill	---	---
Total Post-Dryer Source Emissions	---	---
Scavenger Control Efficiency	N/A	N/A
Total Uncontrolled Emissions ([=] lb/hr)	6.0	2.3
Total Uncontrolled Emissions ([=] ton/yr)	6.9	2.6
Total Controlled Emissions ([=] lb/hr)	6.0	2.3
Total Controlled Emissions ([=] ton/yr)	6.95	2.63

Source: National Asphalt Pavement Association

Notes:
[1] CO 1-hr Averaging Period
[2] CO 8-hr Averaging Period
[3] SO_2 3-hr Averaging Period
[4] TPY calculation includes fugitive emissions from Table 6.

CONVERSION TO STANDARD CONDITIONS

Idaho Sand & Gravel
Portable Asphalt Plant

P = Actual Pressure (IN. HG)	=	29.92
Bw = Actual Moisture Fraction	=	0.30
T = Actual Temperature (deg F)	=	300
Qa = Actual flowrate (ACFM)	=	45000
Annual Hours of Operation	=	

Conversion to Dry Standard Conditions

Qds = Flowrate in Dry Standard Cubic Feet per Minute
Qds = (1−Bw)*(Qa)*(528/T)*(P/29.92) = 21851.3 DSCFM

Conversion PPMv to Weight/Volume

	PPMv	lb/ft3	ug/m3
CO	0.0	0.00E+00	0.00E+00
NO		0.00E+00	0.00E+00
SO2		0.00E+00	0.00E+00
O3		0.00E+00	0.00E+00

Pounds/Cubic Feet = PPMv*Molecular Weight/(385*10^6)
Micrograms/Cubic Meter = PPM*Molecular Weight/(22.4*10^3*298/273)

Emissions

	lb/hr	tons/year	grams/sec
CO	0.00E+00	0.00E+00	0.00E+00
NO	0.00E+00	0.00E+00	0.00E+00
SO2	0.00E+00	0.00E+00	0.00E+00
O3	0.00E+00	0.00E+00	0.00E+00

File Drystand.wk1

APPENDIX B

Idaho Sand & Gravel
Screen3 Modeling Output

08/15/96
14:07:32
*** SCREEN2 MODEL RUN ***
*** VERSION DATED 92245 ***

Idaho Sand & Gravel Portable 400 T/hr Barber Green HMA

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126000
STACK HEIGHT (M)	=	5.1816
STK INSIDE DIAM (M)	=	.9144
STK EXIT VELOCITY (M/S)	=	32.3403
STK GAS EXIT TEMP (K)	=	422.0389
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

BUOY. FLUX = 20.269 M**4/S**3; MOM. FLUX = 151.780 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	209.84	4.33	4.31	NO
100.	.4610	4	20.0	20.0	6400.0	15.41	8.31	4.84	NO
200.	3.198	4	20.0	20.0	6400.0	15.41	15.71	8.76	NO
300.	3.293	4	20.0	20.0	6400.0	15.41	22.78	12.41	NO
400.	2.803	4	15.0	15.0	4800.0	18.83	29.71	15.76	NO
500.	2.369	4	15.0	15.0	4800.0	18.83	36.36	18.71	NO
600.	2.145	4	10.0	10.0	3200.0	25.65	43.12	22.00	NO
700.	1.912	4	10.0	10.0	3200.0	25.65	49.53	24.74	NO
800.	1.744	4	8.0	8.0	2560.0	30.76	56.05	27.76	NO
900.	1.586	4	8.0	8.0	2560.0	30.76	62.31	30.36	NO
1000.	1.436	4	8.0	8.0	2560.0	30.76	68.52	32.91	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
248.	3.452	4	20.0	20.0	6400.0	15.41	19.21	10.58	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.452	248.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

APPENDIX C

Idaho Sand & Gravel
AIRS

Response to Comments and Questions Submitted During a
Public Comment Period on Idaho Sand & Gravel's
Proposed Tier II Operating Permit (OP) #777-00009 for the Entire Facility

COMMENTS AND RESPONSES

Comment #1: The applicant has requested to decrease the permitted allowable PM-10 emission rate limit from 17.32 lb/hr to 8.66 lb/hr.

DEQ Response: DEQ has refined the PM-10 emission rate by utilizing the grain loading standard defined in the New Source Performance Standards for Hot Mix Asphalt Facilities (40 CFR 60.90). This technology based standard is defined as 0.04 gr/dscf (grains per dry standard cubic foot). Based upon the standard volumetric flowrate for the Idaho Sand & Gravel facility, the minimum PM-10 allowable emissions is 7.5 lb/hr.

Comment #2: The applicant has requested to add #5 fuel oil to the permit.

DEQ Response: DEQ revised the final OP to reflect this comment and has incorporated the use of ASTM #5 fuel oil for the drum dryer burner.